

**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF AIR RESOURCES
AIR POLLUTION CONTROL REGULATION NO. 33**

**CONTROL OF VOLATILE ORGANIC COMPOUNDS FROM
ARCHITECTURAL COATINGS AND INDUSTRIAL MAINTENANCE COATINGS**

33. Control of Volatile Organic Compounds from Architectural and Industrial Maintenance Coatings

33.1 Definitions

As used in these regulations, the following terms shall, where the context permits, be construed as follows:

33.1.1 "Architectural Coating" means any coating which is applied to stationary structures and their appurtenances, mobile homes, pavements or curbs.

33.1.2 "Volatile Organic Compound" and "VOC" means any organic compound which participates in atmospheric photochemical reactions. This includes any organic compound other than the following compounds:

- (a) acetone
- (b) CFC-11 (trichlorofluoromethane)
- (c) CFC-12 (dichlorodifluoromethane)
- (d) CFC-113 (1,1,1-trichloro 2,2,2-trifluoroethane)
- (e) CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
- (f) CFC-115 (chloropentafluoroethane)
- (g) ethane
- (h) HCFC-22 (chlorodifluoromethane)
- (i) HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
- (j) HCFC-124 (2-chloro 1,1,1,2-tetrafluoroethane)
- (k) HCFC-141b (1,1-dichloro 1-fluoroethane)
- (l) HCFC-142b (1-chloro 1,1-difluoroethane)
- (m) HFC-23 (trifluoromethane)
- (n) HCFC-125 (pentafluoroethane)
- (o) HCFC-134 (1,1,2,2-tetrafluoroethane)

- (p) HFC-134a (1,1,1,2-tetrafluoroethane)
- (q) HCFC-143a (1,1,1-trifluoroethane)
- (r) HCFC-152a (1,1-difluoroethane)
- (s) methane
- (t) methyl chloroform (1,1,1-trichloroethane)
- (u) methylene chloride (dichloromethane)
- (v) parachlorobenzotrifluoride (PCBTF)
- (w) volatile methyl siloxanes (VMS)
- (x) The perfluorocarbon compounds which fall into these classes:
 - (1) cyclic, branched or linear, completely fluorinated alkanes;
 - (2) cyclic, branched or linear, completely fluorinated ethers with no unsaturations;
 - (3) cyclic, branched or linear, completely fluorinated tertiary amines with no unsaturations; and
 - (4) sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

These compounds have been determined to have negligible photochemical reactivity. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds with negligible photochemical reactivity, as defined above, an owner or operator may exclude these negligible photochemical reactive compounds when determining compliance with an emissions standard. Exempt solvents will be treated as water in "pounds of VOC per gallon of coating minus water" calculations.

33.1.3 "Halogenated Organic Compound" and "HOC" means the following compounds:

- (a) CFC-11 (trichlorofluoromethane)
- (b) CFC-12 (dichlorodifluoromethane)
- (c) CFC-113 (1,1,1-trichloro 2,2,2-trifluoroethane)
- (d) CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
- (e) CFC-115 (chloropentafluoroethane)
- (f) HCFC-22 (chlorodifluoromethane)
- (g) HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)

- (h) HCFC-124 (2-chloro 1,1,1,2-tetrafluoroethane)
 - (i) HCFC-141b (1,1-dichloro 1-fluoroethane)
 - (j) HCFC-142b (1-chloro 1,1-difluoroethane)
 - (k) methyl chloroform (1,1,1-trichloroethane)
 - (l) methylene chloride (dichloromethane)
- 33.1.4 "Appurtenances" means an accessory to an architectural structure, including, but not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, window screens, lamp posts, heating and air conditioning equipment, other mechanical equipment, large fixed stationary tools and concrete forms.
- 33.1.5 "Below Ground Wood Preservative" means any coating formulated to protect below ground wood from decay or insect attack.
- 33.1.6 "Bituminous Coating" means a black or brownish coating material which consists mainly of hydrocarbons, which is soluble in carbon disulfide, and which is obtained from natural deposits or as residue from the distillation of crude oil or low grades of coal.
- 33.1.7 "Bond Breaker" means a coating applied between layers of concrete to prevent the freshly poured layer of concrete from bonding to the layer over which it is poured.
- 33.1.8 "Clear Wood Finish" means any clear or semitransparent coating, including lacquers and varnishes, applied to wood substrates to provide a transparent or translucent solid film.
- 33.1.9 "Concrete Curing Compound" means a coating applied to a freshly poured concrete to retard the evaporation of water.
- 33.1.10 "Dry Fog Coating" means a spray coating formulated such that overspray droplets dry before falling on surfaces other than the substrate.
- 33.1.11 "Fire Retardant Coating" means a coating which reduces the rate of flame spread and resists ignition of a substrate to which it is applied when exposed to high temperatures.
- 33.1.12 "Flat Architectural Coating" means a coating which registers a

gloss of less than 15 on a gloss meter held at an 85° angle to the coated surface or less than 5 on a gloss meter held at a 60° angle, and which is described on the label as a flat coating.

- 33.1.13 "Form Release Compound" means a coating applied to a concrete form to prevent freshly poured concrete from bonding to the form.
- 33.1.14 "Graphic Arts Coating (Sign Paint)" means a coating marketed solely for application to indoor or outdoor signs and includes lettering enamels, poster colors, and bulletin colors.
- 33.1.15 "High Temperature Industrial Maintenance Coating" means an industrial maintenance coating formulated specifically to withstand temperatures in excess of 400°F.
- 33.1.16 "Industrial Maintenance Coating" means a high performance coating which is formulated for the purpose of protecting against heavy abrasion, water immersion, corrosion, temperature extremes, electric potential, solvents or other chemicals.
- 33.1.17 "Label" means any written, printed, or graphic matter affixed to, applied to, attached to, blown onto, formed, molded onto, embossed on, or appearing upon any architectural coating package, for the purposes of branding, identifying, or giving information with respect to the product or to the contents of the package.
- 33.1.18 "Lacquer" means a clear or pigmented coating formulated with nitrocellulose or synthetic resins to dry by solvent evaporation without chemical reaction.
- 33.1.19 "Magnesite Cement" means a coating for application to magnesite cement decking to protect the magnesite cement substrate from erosion by water.
- 33.1.20 "Mastic Texture Coating" means a coating, including a waterproof mastic coating, which is formulated to cover holes and minor cracks and to conceal surface irregularities.
- 33.1.21 "Metallic Pigmented Coating" means a coating which is formulated with a minimum of 0.4 pounds per gallon of

metallic pigment.

- 33.1.22 "Multicolored Coating" means a coating which exhibits more than one color when applied and which is packaged in a single container and applied in one coat.
- 33.1.23 "Non-Flat Architectural Coating" means a coating which registers gloss of 15 or greater in a gloss meter held at an 85° angle to the coated surface or 5 or greater on a gloss meter when held at a 60° angle.
- 33.1.24 "Opaque Stain" means a stain which is not classified as a semi-transparent stain.
- 33.1.25 "Person" means an individual, trust, firm, joint stock company, corporation (including quasi-governmental corporation), partnership, association, syndicate, municipality, municipal or state agency, fire district, club, non-profit agency or any subdivision, commission, department, bureau, agency or department of state or federal government (including quasi-governmental corporation) or of any interstate body.
- 33.1.26 "Pretreatment Wash Primer" means a coating which contains a minimum of 12% acid by weight which is applied directly to bare metal surfaces to provide necessary surface etching.
- 33.1.27 "Primer" means a coating formulated to provide a firm bond between substrate and subsequent coats.
- 33.1.28 "Quick-dry Primer, Sealer, and Undercoater" means any primer, sealer or undercoater which is intended to be applied to the surface of a substrate and which dries to touch within one-half hour and can be recoated in two hours, as determined by ASTM-D 1640 or another method approved by the Division.
- 33.1.29 "Roof Coating" means a coating formulated for application to exterior roofs for the primary purpose of preventing penetration of the substrate by water, or reflecting heat and ultraviolet radiation.
- 33.1.30 "Sealer" means a coating formulated and applied to prevent subsequent coatings from being absorbed into the substrate, or to prevent harm to subsequent coatings by materials in the

substrate.

- 33.1.31 "Semi-Transparent Stain" means a coating which is formulated to change the color of the substrate but not conceal or change the texture of the surface.
- 33.1.32 "Shellac" means a clear or pigmented coating formulated with natural resins, except nitrocellulose and gum resins, thinned with alcohol, which dries by evaporation without a chemical reaction.
- 33.1.33 "Swimming Pool Coating" means a coating applied to the interior surface of swimming pools which is specifically formulated to resist swimming pool chemicals.
- 33.1.34 "Tile-like Glaze Coating" means a coating which is formulated to provide a tough, extra durable coating system, which is applied as a continuous, seamless high-build film, and which cures to a hard glaze finish.
- 33.1.35 "Traffic Marking Coating" means a coating formulated and applied to streets, highways and other surfaces including, but not limited to, curbs, berms, driveways and parking lots.
- 33.1.36 "Undercoater" means a coating formulated and applied to provide a smooth surface for subsequent coats.
- 33.1.37 "Varnish" means a clear or pigmented coating formulated with various resins to dry by chemical reaction on exposure to air and which is intended to provide a durable transparent or translucent solid protective film.
- 33.1.38 "Waterproofing Sealer" means a colorless coating which is formulated and applied for the sole purpose of protecting porous substrates by preventing the penetration of water and which does not alter surface appearance or texture.
- 33.1.39 "Wood Preservative" means any coating which is formulated to protect wood from decay or insect attack and which is registered as a pesticide product with the United States Environmental Protection Agency.

33.2 Applicability and Exemptions

33.2.1 The provisions of this regulation apply to any person who sells, offers for sale, or applies architectural or industrial maintenance coating or who manufactures architectural or industrial maintenance coating for sale within the State of Rhode Island.

33.2.2

33.2.3 The provisions of this regulation do not apply to the following:

- (a) Architectural coatings and industrial maintenance coatings that are sold, offered for sale or manufactured in Rhode Island for shipment and use outside of Rhode Island;
- (b) Architectural coatings and industrial maintenance coatings manufactured prior to the date specified in Subsection 33.5.3 which are sold or offered for sale until 18 months after that date provided that the product is labelled with the date manufactured or a code indicating the date of manufacture in accordance with the requirements of Subsection 33.4.1;
- (c) Architectural coatings supplied in containers having capacities of one quart or less;
- (d) Architectural coatings sold in non-refillable aerosol containers having capacities of one liter or less; and
- (e) Any architectural coating or industrial maintenance coating that is registered with the Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. 136 et seq. as a pesticide product is exempt from the requirements of this regulation until EPA approves whatever changes to the formulation and/or the package label are needed to comply with this regulation, provided the manufacturer submits an application to EPA for an amended registration by the date specified in Subsection 33.5.3 and submits a copy of this application to the Director by that date.

33.3 Emission Limitations

- 33.3.1 No person shall sell, offer for sale, or apply any architectural coating which has a volatile organic compound content, expressed in pounds of VOC per gallon of coating, as applied, minus water and any colorant added to tint bases, in excess of the following limits:

TYPE OF COATING	EMISSION LIMITATION
	lb VOC/gallon coating applied minus water and colorant added to tint
Bituminous Pavement Sealer	0.8
Bond Breakers	5.0
Concrete Curing Compound	2.9
Dry Fog Coating	3.3
Flat Architectural Coating	2.1
Fire Retardant Coating	
Clear	7.1
Pigmented	4.2
Form Release Compound	2.1
Graphic Arts (sign) Coating	3.8
High Temperature Industrial Maintenance Coating	5.4
Industrial Maintenance Coating	3.8
Lacquer	5.7
Magnesite Cement Coating	3.8
Mastic Texture Coating	2.5
Metallic Pigmented Coating	4.2
Multicolored Coating	5.0
Non-Flat Architectural Coating	3.2

TYPE OF COATING	EMISSION LIMITATION
Pretreatment Wash Primer	6.5
Primer/Sealer/Undercoater	2.9
Quick-Dry Primers, Sealers and Undercoaters	4.2
Roof Coating	2.5
Shellac	
Clear	6.1
Pigmented	4.6
Stains	
Semi-Transparent	4.6
Opaque	2.9
Swimming Pool Coating	5.0
Tile-Like Glaze Coatings	4.6
Traffic Marking Coating	2.1
Varnish	3.8
Waterproofing Sealer	5.0
Wood Preservative	4.6
Any other coating	2.1

33.3.2 If a coating is consistent with the definition of more than one category listed above, then the lower emission limitation shall apply. Exceptions to this requirement are as follows:

- (a) High Temperature Industrial Maintenance Coatings which are represented as metallic pigmented coatings for use consistent with the definition of high temperature industrial maintenance coatings;
- (b) Metallic Pigmented Coatings, which are recommended for use as primers, sealers, undercoatings, roof coatings, industrial maintenance coatings;

- (c) Lacquers which are recommended for use as sealers in conjunction with clear lacquer topcoats; and
- (c) Shellacs.

33.3.3 If thinning is necessary, adding the recommended amount of thinner must not cause the coating, as applied, to exceed the applicable VOC limitation.

33.4 Labeling Requirements

33.4.1 No person shall sell, offer for sale, apply, or manufacture any architectural coating or industrial maintenance coating specified in Section 33.3 for sale in Rhode Island unless the label on the coating's container displays the following:

- (a) The manufacturing date of the contents of the container or a code indicating the manufacturing date of the contents, if the manufacturer has supplied an explanation of each code to the Director by the date specified in Subsection 33.5.3, and, thereafter, 30 days before the use of any new code; and
- (b) The maximum volatile organic compound content of the coating, as applied, expressed as pounds of VOC per gallon of coating minus water and any colorant added to tint base; and
- (c) A statement of the manufacturer's recommendation regarding thinning of the coating. If thinning of the coating prior to use is not necessary, the recommendation must state that the coating is to be applied without thinning under normal environmental and application conditions. Thinning does not include dilution of architectural coatings with water.

33.5 Compliance Demonstration/Testing

33.5.1 Each manufacturer of architectural coatings subject to the requirements of this regulation shall submit to the Director by the date specified in Subsection 33.5.3, and every three years thereafter, a document which certifies that each coating manufactured after that date and sold in Rhode Island is in

compliance with this regulation. The following information must be maintained by the manufacturer, included in the compliance certification, and made available to the Division or to EPA on request for each coating sold in the State of Rhode Island:

- (a) The name and address of the owner of the architectural or industrial maintenance coating brand name and the name of a designated contact person;
- (b) Any claims of confidentiality;
- (c) Coating brand name and category;
- (d) Amount of each coating, in gallons, shipped to Rhode Island during the previous calendar year, and the method used to determine the amount; and
- (e) The average and maximum pounds VOC per gallon of coating minus water and any colorant added to tint base.

33.5.2 On and after 1 July 1994, the manufacturer of an architectural or industrial maintenance coating shall maintain records of the amount, in pounds, of each coating subject to this regulation sold in Rhode Island during the previous calendar year, and the method used to determine that the amount, and shall make that information available to EPA or to the Division on request.

33.5.3 Compliance with this regulation, with the exception of Subsection 33.5.2, shall be achieved by the date 90 days after the date that the EPA notifies the Director that Rhode Island has failed to achieve a 15% reduction in VOC emissions from the 1990 emission levels, in accordance with the contingency measure provisions of Rhode Island's State Implementation Plan. New products developed after the compliance date shall be in compliance with the requirements of this regulation upon being offered for sale.

33.5.4 Compliance with the emission limitations of Subsections 33.3.1 and 33.3.2 shall be demonstrated upon request of the Director in accordance with 40 CFR 60, Appendix A, Method 24, or another EPA approved method which has been accepted by the Director.

